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39-1517-2 FWC

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :  
KAZUFUMI ISHIYAMA : GROUP ART UNIT: 212  
SERIAL NO. : EXAMINER: BUDD  
FILED: :  
FOR: CURVILINEAR ARRAY OF :  
ULTRASONIC TRANSDUCERS :

PATENT APPLN.: USSN 679,058 Filed December 6, 1984

DECLARATION UNDER 37 CFR 1.132

HONORABLE COMMISSIONER OF PATENTS & TRADEMARKS  
WASHINGTON, D.C. 20231

SIR:

I, Koh Sugiyama, hereby declare:

that I am a Japanese citizen residing at 396-15 Aza

Saemon Fujieda City Shizuoka Prefecture Japan;

that my educational background is as follows:

completed "Ohsaka Butsuryo Technical School"

that I have been a sonographer to obtain an ultrasound  
tomographic image of a patient by using an ultrasound  
tomographic apparatus in Japan for the last 9 years.

that in May 1986 I published in the JSUM proceedings a  
description of my experiences using the PVE-393M probe, and in  
particular, in this description at page 427 I noted,

...we should diagnose not only the upper abdominal region, but also the lower abdominal region as a routine examination. Because the handy convex probe has been developed, it has become easier to examine the lower portion of the dome of the right lobe of the liver, the subinguinal lymph gland of the abdomen and the lower abdominal region...;

that "the handy convex probe" I referred to in the above noted passage was the Toshiba PVE-393M convex probe;

that my experiences described in the May, 1986 JSUM Proceedings were in no way funded or otherwise related to any activities sponsored by the inventors or the assignee of the above-identified application, but instead reflect my independent evaluation of the efficacy of the convex PVE-393M probe;

that I am not now or have I ever been an employee of either the inventors or the assignee of the above-noted application;

that I have extensively used the convex probe PVE-393M in the field of clinical diagnosis and that before I used the PVE-393M probe, I have used a wide variety of other probes in my practice;

that it has been my experience that before availability of the PVE-393M probe, it was difficult to visualize a wide area of tissue at a great depth in the patient because the prior probes did not have wide viewing angle and a small radius as does the PVE-393M convex probe;

that the PVE-393M convex probe has a viewing angle of  $98^{\circ}$ , which is to my knowledge wider than any other probe in existence;

that the wide viewing angle at a great depth enabled by the PVE-393M probe permits observance of organs deep within the human body, such as the spleen, without interference effects produced by the lungs, which otherwise would cause significant interference because the lung contains air through which ultrasound hardly propagates;

the convex PVE-393M probe replaces conventional linear and sector probes for usual diagnostic applications for diagnosing the liver, kidney, spleen, pancreas, etc., because a wide viewing angle enabled by the PVE-393M probe enabled viewing of these organs without obstruction or interference by stomach gases, and indeed, the small radius of curvature enables use of the PVE-393M probe to apply pressure to areas or organs such as the stomach in which an intervening pocket of gas exists thereby to more effectively displace the gas and provide viewing of the organ or region or interest;

that to my knowledge conventional convex probes do not have as wide a viewing angle as the PVE-393M convex probe and that the PVE-393M, as above indicated, facilitates pushing aside abdominal gases which otherwise obscure an image to be derived; and,

that in my opinion the PVE-393M probe has had and will continue to have a substantial impact in the field of clinical diagnosis as a result of the small radius of curvature, wide

viewing angle, and excellent resolution provided by the PVE-393M prove.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date: 2/10/1987

Signature: Koh Sugiyama.

Name: Koh Sugiyama

(typed or printed)